



LIEBHERR

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL



Machine Id
LIEBHERR R930 052446-1716

Component
Left Final Drive

Fluid
PETRO CANADA TRAXON SYNTHETIC 75W90 (--- GAL)

RECOMMENDATION

We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0286580	LH0202908	LH0242615
Sample Date		Client Info		16 May 2024	12 Jun 2023	15 Nov 2022
Machine Age	hrs	Client Info		3969	2977	2489
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Not Changd
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	SEVERE	ABNORMAL

WEAR

PQ levels are abnormal. Chromium and iron ppm levels are abnormal. Aluminum ppm levels are noted. Titanium ppm levels are marginal. Gear wear is indicated. The high ferrous density (PQ) index indicates that abnormal wear is occurring.

PQ		ASTM D8184*		▲ 726	▲ 644	87
Iron	ppm	ASTM D5185(m)	>500	▲ 1386	▲ 2611	▲ 1246
Chromium	ppm	ASTM D5185(m)	>10	▲ 18	▲ 31	▲ 15
Nickel	ppm	ASTM D5185(m)	>10	<1	1	<1
Titanium	ppm	ASTM D5185(m)		▲ 11	▲ 26	6
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>25	● 177	● 389	● 95
Lead	ppm	ASTM D5185(m)	>25	5	2	0
Copper	ppm	ASTM D5185(m)	>50	<1	1	<1
Tin	ppm	ASTM D5185(m)	>10	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	<1	<1
White Metal	scalar	Visual*	NONE	NONE	NONE	VLITE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE

CONTAMINATION

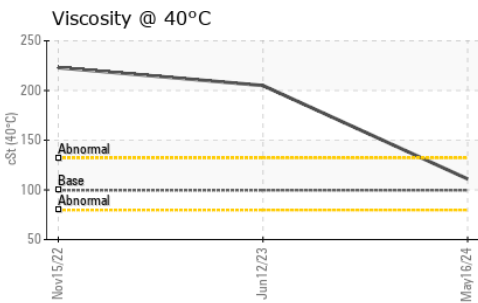
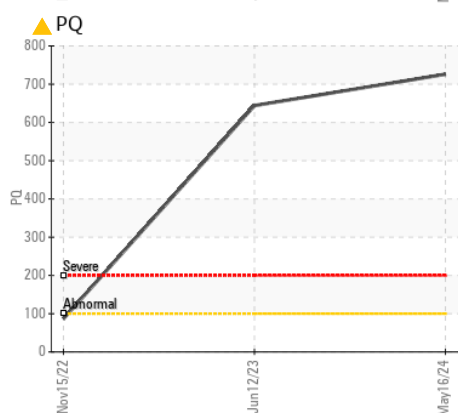
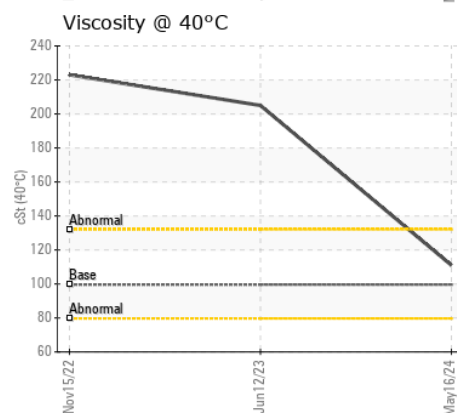
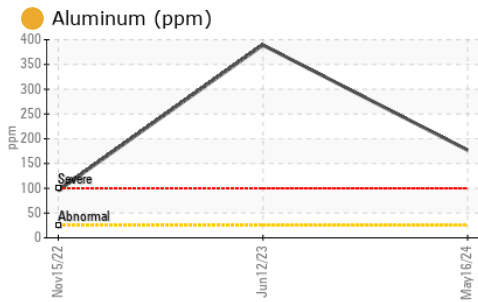
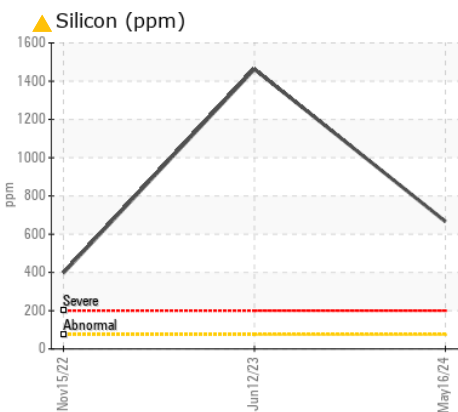
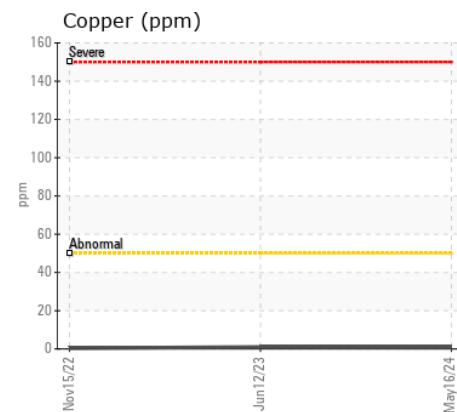
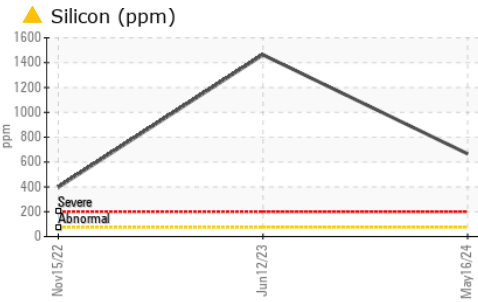
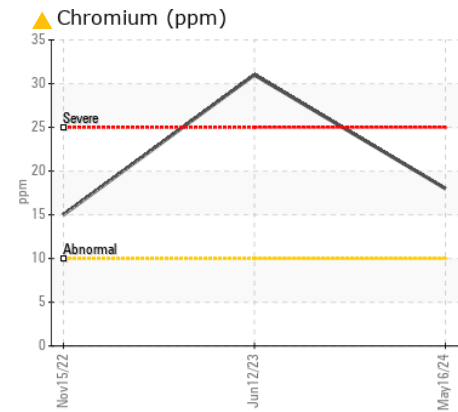
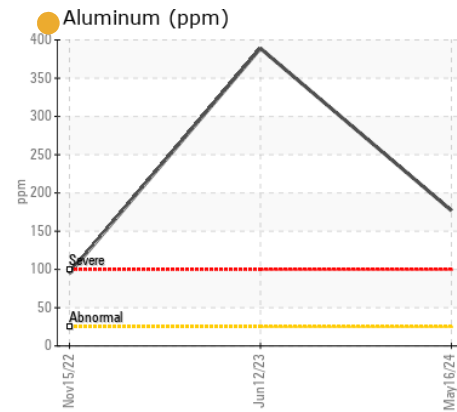
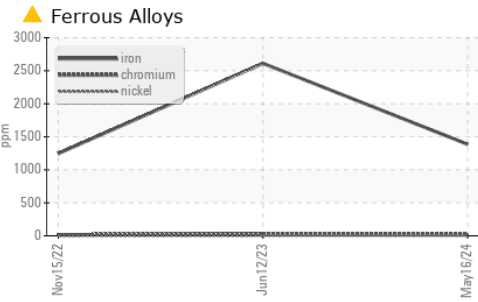
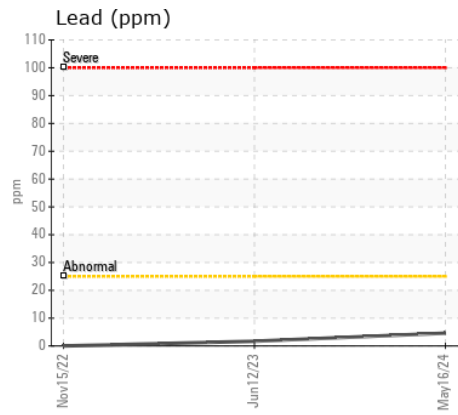
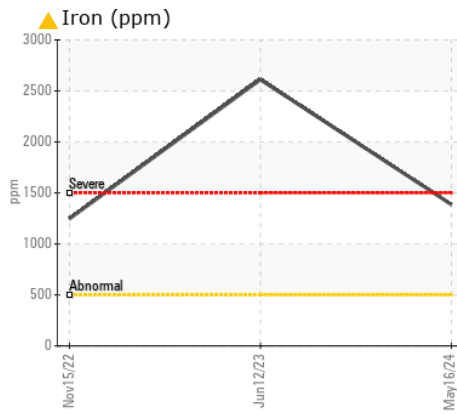
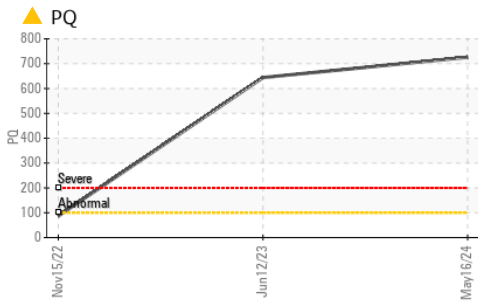
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. High amount of ingressed dirt has caused abrasive wear to the component.

Silicon	ppm	ASTM D5185(m)	>75	▲ 666	▲ 1463	▲ 397
Potassium	ppm	ASTM D5185(m)	>20	62	130	36
Water		WC Method	>0.2	NEG	NEG	NEG
Silt	scalar	Visual*	NONE	VLITE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

Additive levels indicate the addition of a different brand, or type of oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		43	116	29
Boron	ppm	ASTM D5185(m)	328	113	4	4
Barium	ppm	ASTM D5185(m)	1	3	8	2
Molybdenum	ppm	ASTM D5185(m)		<1	2	2
Manganese	ppm	ASTM D5185(m)		13	22	11
Magnesium	ppm	ASTM D5185(m)	1	60	101	30
Calcium	ppm	ASTM D5185(m)	7	357	2070	1967
Phosphorus	ppm	ASTM D5185(m)	1145	1455	4788	4670
Zinc	ppm	ASTM D5185(m)	3	168	728	745
Sulfur	ppm	ASTM D5185(m)	17909	17354	3365	3084
Visc @ 40°C	cSt	ASTM D7279(m)	99.6	111	205	223



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0286580
Lab Number : 02637281
Unique Number : 5786443
Test Package : MOB 1 (Additional Tests: PQ)

THOMAS CAVANAGH CONSTRUCTION LTD
 RR # 2, 9094 CAVANAGH ROAD
 ASHTON, ON
 CA K0A 1B0
 Contact: Keith

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

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